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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,180	03/12/2001	Richard V. Lucas	S111.2-9524	1023

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VIDAS, ARRETT & STEINKRAUS, P.A.
6109 BLUE CIRCLE DRIVE
SUITE 2000
MINNETONKA, MN 55343-9185

EXAMINER	
MADSEN, ROBERT A	

ART UNIT	PAPER NUMBER
1761	3

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Apr 3

Office Action Summary	Application No.	Applicant(s)	
	09/804,180	LUCAS, RICHARD V.	
	Examiner	Art Unit	
	Robert Madsen	1761	

-- The MAILING DATE of this communication appears on th cover sheet with th correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-15 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 4, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magaton (US 2040700) in view of Vezzani (US 5902520).

3. Regarding claim 1, Magaton teaches two section cylindrical particulate separator divided by a separator plate (i.e. the unite of Figure 4 divided by screen 90) wherein the first section has an gas/particle inlet and a particle outlet (i.e. items 20 and 90 in Figure 4) and the second section has paddles (item 85) a water inlet (items 74/73 of Figure 3) with an outlet port for water (item 25) and gas outlet (item 36). Magaton is silent in teaching an outlet port allows water and gas to leave the chamber, as recited in claim 1

4. Vezzani teaches a cylindrical particulate separator wherein particulate containing gas is mixed with a liquid and wherein the liquid/gas/particulate exit (See Figure 1, Column 2, line 40 to Column 3, line 60). Vezzani teaches one exit because instead of slowly mixing the particulate containing gas with a liquid for the liquid to mix with the particulates, as taught by Magaton, Vezzani teaches an alternative high mixing method that forms intimate contact between the liquid and particulates in the gas, which results in a higher efficiency (Column 3, lines 5- 53). Therefore, it would have been obvious to modify Magaton and provide one outlet port since one would have been substituting one

means for discharging from a cylindrical particulate separator for another for the same purpose: removing particulate from gas by mixing with a liquid.

5. Regarding claim 4, Magaton teach the air stream is fed from a furnace (Column 3,lines 5-10).

6. Regarding claim 9, Magaton is silent in teaching a plurality of radially extending members in the first section and that these are longer than the ones in the second section. However, Vezzani teach radially extending members throughout the separator and teach varying designs and sizes (e.g. blades and cones wherein the cones are radially longer to create a smaller gap between the wall and cone). Vezzani teaches the particular order in which they are assembled is based on the size of the particulates (column 3, lines 8-50) Therefore , it would have been obvious to include radially extending members in the first section, since Vezzani teaches radially extending members agitate the gas and particulate and the liquid/gas/particulate mixture. To select any particular size or design of radially extending members for either the first or second section would have been an obvious matter of design depending on the size of particulate since Vezanni teaches the arrangement is selected based on the size of particulates.

7. Regarding claims 10 and 11, Magaton is silent in teaching any particular shaft speed. Vezzani teach it is preferred to blade speed 200-1000 rpm is sufficient for mixing a gas containing particulates with a liquid (Column 3, lines 1-7). Vezzani also teaches the efficiency of the purification process depends on the speed (Column 3, lines 50-60). Therefore it would have been obvious to select a shaft speed of 500-2300

rpm since this was considered sufficient for mixing a gas containing particulates with a liquid in a cylindrical separator. With respect to any particular speed outside of 200-1000 rpm, such as 1100 rpm, to select any speed outside this range would have been an obvious result effective variable of the desired degree of purification since Vezzani the efficiency of the purification process is regulated by the speed of rotation.

8. Regarding claim 8, although Magaton is silent in teaching any particular angle of paddle face, Vezzani teach it cone shaped blades (i.e. angles) to speed the flow of material . Therefore, it would have been obvious to further include paddles on the shaft of Magaton with angles to increase the flow of materials during mixing. To select any particular angle would have been an obvious result effective variable of the desired mixing velocity.

9. Claims 2 ,5-7,12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magaton (US 2040700) in view of Vezzani (US 5902520) as applied to claims 1,4, 8-11 above, further in view of Deardorff et al. (US 42135371).

10. Regarding claims 2 ,Magaton modified teach the dust falls from the first section into a collection receptacle (item 92 Magaton), but is silent in teaching a rotatable trough screw adjacent to the aperture of the first section. Deardorff et al. is relied on as evidence of using a rotatable trough screw in combination with a particulate separator system so that the fines can also be sent to the next process step(Figure 1, Column 3, line 15 to Column 4, line 7). Therefore, it would have been obvious to include a trough screw for fine particle collection since it would allow to use the fine particles in

subsequent steps and one would have been substituting one type of collection system for another for the same purpose: collect particles separated from a cooling process air stream.

11. Regarding claim 5 , 12, and 13, Magaton modified teaches the separator can be used with a furnace or a grinder (Magaton Column 3,lines 5-10, Column 2, lines 50-52), but is silent in teaching a cooler, dryer, or hammer mill. Deardorff et al. is relied on the combination of a particulate separator (e.g. a cyclone) in combination with a grinder (e.g. hammer mill) for the same purpose as Magaton: a particulate collection system (Abstract, Column 3, lines 5-12). Furthermore, Deardorff et al. teach the system in a *method* of treating meal (i.e. corn). Therefore, it would have been obvious to combine the device of Megaton with a hammer mill since one would have been substituting one type of grinder for another for the same purpose: providing a particulate separation system for the cooling air from a grinder. It would have further been obvious that the device of Magaton could be used to replace a cyclone separator in the method of treating meal and system of Deardorff et al. since (1) Magaton describes the features of a cyclone system (Column 1, lines 19-35) , (2) offers an improvement on such costly devices, and (3) Deardorff et al. teach cyclones in combination with grinders. Thus, one would have been substituting one known particulate separator for another for a grinder device that would provide a cost savings.

12. Regarding claims 6 ,7,14, and 15 although Magaton teach collecting the liquid encapsulated material and air separate so the liquid portion fills a tank using the end wall of the cylinder as the director plate (See Figure 4), Magaton is silent in teaching

using a pump. However, to include a pump would have been an obvious matter of design since this one could t one could recycle and reuse the water for subsequent separations and provide a low cost operation, which is one of the objectives of Magaton.

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magaton (US 2040700) in view of Vezzani (US 5902520) further in view of Deardorff et al. (US 42135371), as applied to claims 2,5-7,12-15 above, further in view of Arnold et al. (US 2770543).

14. Regarding claim 3, Magaton is silent in teaching the trough screw adjacent to the aperture accumulates material before moving. Arnold et al. teach exhaust air that is to be re-used in a meal cooling operation is processed through a separator wherein the solids are removed from the gases and deposited into a rotatable trough screw adjacent to an aperture of the separator so that the solids may be collected. However, the material is not added back to the cooling system until a sufficient volume of material (i.e. a plug) has gathered at the end of the trough to trigger the opening of a gate valve. Arnold et al. teach maintaining the gate valve in a normally closed position will prevent room temperature air from affecting the processing conditions (Column 3, lines 1-58).

15. Therefore, it would have been obvious to include the trough screw of Arnold et al. since Arnold et al. teach the trough screw provides a means to collect material from the apparatus and limit exposure to room conditions which would affect the desired process air conditions.

Double Patenting

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 1,4-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,248,156. Although the conflicting claims are not identical, they are not patentably distinct from each other.

18. Regarding claims 1, 4-7,12-15, Patent '156 claims a particulate separator as recited in claims 1,4,6,7,14,15 comprising a cylindrical chamber with two section wherein particulate containing air enters the first section , passes through a separator plate (i.e. an orifice) and into a second section with a water inlet for mixing the particulate containing air stream with water and an outlet for the water encapsulated particulate outlet and air outlet. Both sections have rotatable paddles. Patent '156 also claims an adjustable orifice gate of variable opening size to discharge particles, but differs from the present invention in that the Patent '156 does not claim a the paddles prevent a build up in a closed position. Additionally Patent '156 does not claim a

particular intended use for the apparatus as recited in claims 5,12, and 13 However since Patent '156 claims the paddles are used to direct the air stream through the orifice and simultaneously direct the particles from the orifice, it would have been obvious that paddles would have sufficient length to the contact walls , and remove any particles at the gate, otherwise the paddles would not be able to direct any of the particles near the walls. Furthermore once it was known to use such an apparatus to recover particulates from an air stream, using the apparatus as part of any known process to recover particles in an air stream as recited in claims 5,12, and 13, would have been an obvious matter of choice,

19. Regarding claims 8-11, to select any particular paddle design or speed settings would have been an obvious matter of choice and resulted from routine experimentation since Patent '156 claims the paddles direct particulates, air stream, and water stream. One of ordinary skill in the art would have known to adjust the speed of the paddle and/or angle at which they are mounted to optimize the "directing" of the particulates and streams.

20. Claims 2 and 3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-20 of U.S. Patent No. 6,248,156.in view of Arnold et al. (US 2770543).

21. Regarding claim 2 and 3, Patent '156 does not claim a particulate collector such as rotatable trough screw adjacent to the aperture that accumulates material before moving. Arnold et al. teach exhaust air that is to be re-used in a meal cooling operation

is processed through a separator wherein the solids are removed from the gases and deposited into a rotatable trough screw adjacent to an aperture of the separator so that the solids may be collected. However, the material is not added back to the cooling system until a sufficient volume of material (i.e. a plug) has gathered at the end of the trough to trigger the opening of a gate valve. Arnold et al. teach maintaining the gate valve in a normally closed position will prevent room temperature air from affecting the processing conditions (Column 3, lines 1-58).

22. Therefore, it would have been obvious to modify Patent '156 and include the trough screw of Arnold et al. since Arnold et al. teach the trough screw provides a means to collect material from the apparatus and limit exposure to room conditions which would affect the desired process air conditions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 7:00AM-3:30PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
May 19, 2003

STEVE WEINSTEIN
PRIMARY EXAMINER 1761
For M. Cano